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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,558	04/07/2005	Mitsuru Takei	265706US0XPCT	8827
22850	7590	06/18/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ROBERTS, LEZAH	
			ART UNIT	PAPER NUMBER
			1614	
			NOTIFICATION DATE	DELIVERY MODE
			06/18/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

Application No.

10/530,558

Applicant(s)

TAKEI ET AL.

Examiner

Lezah W. Roberts

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

This Office Action is in Response to the Request for Continued Examination filed March 28, 2007. All previous rejections have been withdrawn unless state below. All new rejections are necessitated by amendment.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claims***

#### **Claim Rejections - 35 USC § 112 - Indefinites**

Claims 1-4, 7-10 and 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1) Claims 1-4, 7-10 and 12-17 recite the term "polymeric". The term "polymeric" is not consistent with the recitation of a "monomer". The Examiner suggests deleting the term "polymeric".

2) Claims 1-4, 7-10 and 12-17 recite the limitation "a ratio". The term ratio means the relationship of one amount to another. The instant claims only recite one amount of one component and not the relationship of two amounts therefore making the claim indefinite.

**Claim Rejections - 35 USC § 103 – Obviousness (New rejections)**

1) Claims 1-2, 6-7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 5,530,038).

Yamamoto et al. disclose a curable composition comprising a polymerizable monomer having an acidic group and an initiator. The compositions have a viscosity ranging from 100 to 30,000 cP at 37°C (see Abstract). The monomers include triethylene glycol dimethacrylate (col. 8, line 9), which may be considered a multifunctional monomer. Solvents include organic solvents or aqueous organic solvents such as ethanol and acetone, which are volatile solvents (col. 11, lines 19-23). The compositions may further contain other polymerizable monomers and a filler (col. 7, lines 50-52). The composition is applied to the teeth after applying a primer composition and light cured. The primer composition comprises a solvent as above that may comprise 30 to 90%; a monomer having an acidic group in its molecule such as 10-(meth)acryloyloxydecyl acidophosphate (col. 4, lines 22-31) which appears to be the same as 10-(meth)acryloyloxydecyl dihydrogen phosphate of the instant claims; and a polymerizable monomer such as 2-hydroxyethyl (meth)acrylate that may comprise 1 to 15% by weight of the primer composition (col. 12, lines 17-53). The compositions of the reference and the compositions of the instant claims appear to have overlapping viscosities. The viscosities of the reference will be higher at a lower temperature such as 30°C and will still appear to overlap the range of the instant claims. The reference

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differs from the instant claims insofar as it does not disclose the viscosity at a temperature of 30°C.

The selection of an optimum value from within a disclosed range is ordinarily within the skill of the art. See In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one of ordinary skill in the art to have picked a viscosity value within the range of 100 to 30,000 cP at 37°C motivated by the desire to optimal conditions for applying the compositions to the teeth as supported by cited precedent.

2) Claims 3-4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 5,530,038) in view of Kohler et al. (US 6,251,963).

The primary reference, Yamamoto et al., is discussed above. Different types of initiators may be used polymerize the compositions. The reference differs from the instant claims insofar as it does not disclose using an acylphosphine oxide as a photoinitiator or a compound such as dipentaerythritol as a polyfunctional monomer.

Kohler et al. disclose compositions that may be used for dental applications. The compositions comprise acylphosphines such as 2,4,6-trimethylbenzoyl-diphenylphosphine oxide (col. 6, lines 63-67). The photoinitiators can be incorporated readily and are capable of curing photopolymerisable compositions effectively without extreme yellowing phenomena (col. 1, lines 20-24). The monomers that are susceptible to polymerization by these compounds include include monomers such as dipentaerythritol pentaacrylate, dipentaerythritol hexaacrylate and pentaerythritol-modified triacrylate

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(col. 9, lines 1-5). The reference differs from the instant claims insofar as it does not disclose using the photoinitiators and monomer in a two dental kit.

It would have been obvious to one of ordinary skill in the art to have used the photoinitiators and monomers in the compositions of the primary reference motivated by the desire to use a photoinitiator that would not cause yellowing of the teeth when used to polymerize a dental composition and to use a monomer that was susceptible to polymerization by the photoinitiator, as supported by the secondary reference.

Claims 1-4, 6-10 and 12-15 are rejected.

No claims allowed.

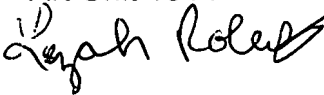
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lezah W. Roberts whose telephone number is 571-272-1071. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin H. Marschel can be reached on 571-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lezah Roberts  
Patent Examiner  
Art Unit 1614



Frederick Krass  
Primary Examiner  
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